REMARKS

Claims 1-4, 6, 8-14, 16, 18-24, 26, 28-48 and 52-54 were pending in the Application prior to the outstanding Office Action. In the listing of claims above, claims 1, 2, 9, 11, 12, 19, 21, 22, 29, 34, 38, 42 and 52 – 54 have been amended.

In the Office Action, Claim 1 was rejected under 35 U.S.C. 112, second paragraph, claims 1, 2, 8, 10-12, 18, 20-22, 28, 30, 43, 45, 47 and 52-54 were rejected under 35 U.S.C. 103(a), claims 3-4, 6, 9, 13-14, 16, 19, 23-24, 26, 29, 44, 46 and 48 were rejected under 35 U.S.C. 103(a), and claims 31-42 were also rejected under 35 U.S.C. 103(a).

Applicant thanks the Examiner for the telephone conferences conducted on October 27, November 1 and November 3, 2006, and the opportunity to discuss the present application and proposed amendments.

I. RESPONSE TO REJECTIONS UNDER 35 U.S.C. §112

The Examiner indicated in paragraph 2 that the specification is vague and indefinite because it is unclear what "a first method" is in the limitation "invoking a first method of said object in response to said first message." Applicants note that the word "method" is a term of art in the field of object-oriented programming. A method is a function or procedure. To invoke a method means simply to call a function or procedure in an object-oriented programming language. Objects in an object-oriented program have associated with them methods (i.e. functions or procedures) which perform certain functions associated with the objects.

Applicants note as of the date of this response, the Wikipedia web site at http://en.wikipedia.org/wiki/Method defines "method" in the field of computer science as: "*In computer science in particular, a method is another name for an action, algorithm, function, or procedure; more specifically, in object-oriented programming, it is an implementation of code responding to certain messages.*" The specification also describes an embodiment of the equipment object model of the present invention as having associated with it a plurality of "methods." In particular, see page 10, lines 9-22; page 12, lines 1-3; page 15, line 28 – page 16, line 3.

Nevertheless, the term "method" is also used in the preamble of the method claims of the present application. To clarify the meaning of the claims, the term "method" when used in its computer science context has been replaced by "procedure" in claims 1, 2, 9, 11, 12, 19, 21, 22,

29, 34, 38, 42, and 52 – 54. In view of the forgoing Applicants respectfully assert that the claim language of the present claims is not vague or indefinite.

II. RESPONSE TO REJECTIONS UNDER 35 U.S.C. §103(a)

In paragraph 5 of the Office Action, the Examiner rejected Claims 1, 2, 8, 10-12, 18, 20-22, 28, 30, 43, 45, 47 and 52-54 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,470,227 issued to Rangachari et al. ("*Rangachari*") in view of U.S. Patent No. 6,549,937 issued to Auerbach et al. ("*Auerbach*"). Because the text of the rejection does not cite *Auerbach* but instead cites U.S. Patent No. 6,198,480 to Contungo et al. ("*Contungo*"), Applicants will assume that this ground of rejection was intended to be *Rangachari* in view of *Contungo*.

In paragraph 6 of the Office Action, the Examiner rejected Claims 3-4, 6, 9, 13-14, 16, 19, 23-24, 26, 29, 44, 46 and 48 as being unpatentable over *Rangachari* and *Contungo* and further in view of U.S. Patent 6,463,352 issued to Tadokoro et al. ("Tadokoro").

In paragraph 7 of the Office Action, the Examiner rejected Claims 31-42 as being unpatentable over *Rangachari* and *Contungo* in view of U.S. Patent 6,658,571 issued to O'Brien et al. ("O'Brien").

Rangachari* in view of *Contungo

A. Independent Claims 1, 11 and 21 are Patently Distinct over *Rangachari* in view of *Contungo*.

Rangachari describes details of a material handling system in which application objects are used to implement automation tasks. The application objects encapsulate domain knowledge and are used by a workflow engine to perform various semiconductor automation tasks, i.e. to take action in a microelectronic manufacturing process. *Rangachari* does not disclose the issue of facilitating host to tool connections and does not disclose any mechanisms for allowing multiple applications to communicate with multiple tools using multiple protocols. In particular, the communication mechanism disclosed in *Rangachari* for communicating with applications is a message bus. See for example item 8 in Figures 1, 5, 6 and 7 and column 6, lines 25-48. Such communication based on a message bus does not teach or suggest the use of multiple protocols that may be concurrently active to manage the same tool. Thus, the support for flexible connectivity between the host and the tool is not taught or suggested by *Rangachari*.

Independent Claims 1, 11 and 21 recite: "receiving a first message in a first selected protocol" and "receiving a second message in a second selected protocol." *Rangachari* does not disclose a method for communicating with tools in which such a multi-protocol capability exists. In contrast, in a preferred embodiment of the present invention, application interface units are used to interface client applications to a logical representation of equipment, and tool interfaces are used to interface to actual tools. See for example page 9, line 14 - page 10, line 3 and Figure 3. In this way, the present invention solves the problem of how to integrate multiple client applications utilizing different protocols and support connectivity to tools, a problem not addressed or solved by the disclosure of *Rangachari*.

Contungo describes a tag browser in which tags that contain information related to sensors or control devices can be displayed and edited. In the system of *Contungo*, an automation program 126 communicates with process control devices 120 over a data bus 122. The state of each control device 120 is reflected by the value of an associated tag. See Figure 1, column 3, lines 25-32. *Contungo* discloses that the automation program 126 in a preferred embodiment interacts with objects in accordance with the ActiveX protocol developed by Microsoft. See column 3, lines 33-45. *Contungo* discloses that automation program 126 can incorporate a tag browser to allow a user to view the tags associated with sensing devices controlled by other automation programs 150. The communication between automation program 126 and automation programs 150 also takes place in accordance with the ActiveX protocol developed by Microsoft. In particular, *Contungo* states that "[i]n the preferred embodiment, each source of tags, ('tag source') viewable using the tag browser 144 is instantiated as an ActiveX control and is made accessible to the browser 144 via the tag dictionary 148. [column 4, lines 20-14]. See also column 4, lines 9-37, column 5, lines 10-20.

Independent Claims 1, 11 and 21 recite: "receiving a first message in a first selected protocol" and "receiving a second message in a second selected protocol." The combination of *Rangachari* with *Contungo* does not teach or suggest two client applications communicating in two protocols. In fact, *Contungo* teaches away from a system capable of receiving messages in two different protocols. The only embodiment taught by Contungo is based on the Component Object Model (COM) and ActiveX controls of Microsoft. As such, it is not a multi-protocol system but a single protocol system that must be programmed according to a specific architecture.

B. Dependent Claims 2, 8, 10, 12, 18, 20, 22, 28, 30, 43, 45, 47 and 52-54 are Patently Distinct over *Rangachari* in view of *Contungo*.

Dependent Claims 2, 8, 10, 12, 18, 20, 22, 28, 30, 43, 45, 47 and 52-54 depend directly or indirectly from independent Claims 1, 11 or 21. These dependent claims include all of the limitations of the independent claim from which they depend. Applicants respectfully assert that dependent Claims 2, 8, 10, 12, 18, 20, 22, 28, 30, 43, 45, 47 and 52-54 are allowable for at least the reasons set forth above concerning independent Claims 1, 11 and 21.

Rangachari* and *Contungo* in view of *Tadakoro

Dependent Claims 3-4, 6, 9, 13-14, 16, 19, 23-24, 26, 29, 44, 46 and 48 are Patently Distinct over *Rangachari* and *Contungo* in view of *Tadakoro*. Dependent Claims 3-4, 6, 9, 13-14, 16, 19, 23-24, 26, 29, 44, 46 and 48 depend directly and indirectly from independent Claims 1, 11 or 21. These dependent claims include all of the limitations of the independent claim from which they depend. Claims 1, 11 and 21 recite, among other things, "receiving a first message in a first selected protocol," "receiving a second message in a second selected protocol," wherein "said second selected protocol is different than said first selected protocol." Both messages identify objects in "an equipment model of said tool." In other words, the present invention allows different client applications to interface using different protocols to tools represented by a single equipment model.

Rangachari and *Contungo* in view of *Tadakoro* does not teach or suggest a single equipment model that can accept messages to perform actions on tools from two client applications utilizing two different protocols. Applicants respectfully assert that dependent Claims 3-4, 6, 9, 13-14, 16, 19, 23-24, 26, 29, 44, 46 and 48 are not obvious over *Rangachari* and *Contungo* in view of *Tadakoro*.

Rangachari* and *Contungo* in view of *O'Brien

Dependent Claims 31 – 42 are Patently Distinct over *Rangachari* and *Contungo* in view of *O'Brien*. Dependent Claims 31 – 42 depend directly and indirectly from independent Claims 1, 11 or 21. These dependent claims include all of the limitations of the independent claim from which they depend. Claims 1, 11 and 21 recite, among other things, "receiving a first message in

a first selected protocol," "receiving a second message in a second selected protocol," wherein "said second selected protocol is different than said first selected protocol." Both messages identify objects in "an equipment model of said tool." In other words, the present invention allows different client applications to interface using different protocols to tools represented by a single equipment model.

Rangachari and *Contungo* in view of *O'Brien* does not teach or suggest a single equipment model that can accept messages to perform actions on tools from two client applications utilizing two different protocols. Applicants respectfully assert that dependent Claims 31-42 are not obvious over *Rangachari* in view of *Tadakoro*.

Additional Remarks

In light of the remarks above, it is respectfully submitted that all of the claims now pending in the subject patent application are allowable, and a Notice of Allowance is requested.

Enclosed is a PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. §1.136 for extending the time to respond up to and including today.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 50-3548 for any matter in connection with this response, including any fee for extension of time or addition of new claims, which may be required.

Respectfully submitted,

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